

RCA

DIRECTV PLUS™ Satellite Dish Antenna

Changing Entertainment. Again.



Installer's Guide

Safety Information

DANGER! Avoid Power lines!

When following the instructions in this guide to install and connect the DIRECTV PLUS™ satellite antenna and connections, take extreme care to avoid contact with overhead power lines, lights and power circuits. Contact with power lines, lights, and power circuits may be fatal.

CAUTION

Before connecting the satellite receiver, read the Safety Information that came packed with the satellite receiver.

Outdoor Dish Antenna Grounding

The outdoor dish antenna used to receive satellite signals and the cable used to connect the outdoor dish antenna to the indoor receiving unit are required to comply with local installation codes and the appropriate sections of the National Electrical Code (NEC), especially Articles 250, 810 and 820. These codes require proper grounding of the metal structure of the outdoor dish antenna and grounding of the connecting cable at a point where it enters the house (or other building). If you are having a professional installer make the installation, the installer must observe installation codes in making the installation. The *Satellite System Self-Installer's Kit* contains instructions on how to make the installation in compliance with the National Electrical Code (NEC). If additional local installation codes apply, contact local inspection authorities.

Compliance with National Electrical Code

Before installing the satellite system, check the electrical code guidelines in your area.

Note to Satellite Dish Installer

This reminder is provided to call your attention to articles 810 and 820 of the 1999 National Electrical Code. Refer to article 810, in particular to 810-1 and 810-15, for required grounding of the metal structure of the Dish Antenna. Refer also to 810-2 which, by reference to article 820, requires that the satellite dish coaxial cable shield be connected to the grounding system of the building as close to the point of cable entry as practical.

Restrictions

Before installing your dish, check the zoning codes, covenants and community restrictions in your area. Some rules prohibit installing large satellite dishes, but may allow small ones. Also, there may be restrictions in your area that limit the mounting height of dishes.

If you encounter homeowner or community restrictions, call 1-800-679-4776. Personnel at this number can provide information that may be helpful when attempting to obtain permission to install a satellite system on your property.

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Preparing for Installation

Chapter Overview:

- Installation Overview
- Mounting Options
- General Site Survey
- Finding the Dish Pointing Coordinates
- Estimating Cable Requirements
- DIRECTV PLUS™ Dish Assembly Overview
- Setting the Elevation and Attaching the Fine Tuning Adjustment
- Attaching the Mast Clamp to the DIRECTV PLUS™ Antenna
- Setting the Tilt (Polarization)
- Attaching the LNB Support Arm and Adapter



Preparing for Installation

Installation Overview

The manual is organized into steps that need to be performed in the order presented.

Preparing for Installation

- **Complete a General Site Survey** – Visually survey your location to make sure it is suitable.
- **Obtain Dish Pointing Coordinates** – Use the on-screen menu system to obtain the exact coordinates (azimuth, elevation, and tilt (polarization)) for pointing the dish. Directions for using on-screen menus can be found in your digital satellite receiver, HDTV, or HD set-top converter manual.
- **Select the Precise Mounting Site** – Use the dish pointing coordinates to conduct a precise site survey to determine the exact mounting site.
- **Estimate Cable Requirements** – Based on your mounting site, you will decide where you want the cables to enter your house, and measure how many feet of cable you need to complete the connections.
- **Begin Dish Assembly** – Partially assemble the satellite dish antenna so that you can preset the correct elevation and tilt (polarization).
- **Set the Antenna's Elevation and Azimuth Coordinates** –
These are important steps. Making sure that your elevation, azimuth and tilt settings are correct will help you to more easily obtain the signals later on.

Mounting the Mast

- **Mount the Mast** – Step-by-step instructions for different mounting options.

Completing the Final Installation

- **Square the Mast** – The mast must be perfectly plumb and level to obtain the signal(s).
- **Complete the Dish Assembly** – Secure the antenna on the mast, connect the RG-6 coaxial cables to the LNBs, and attach the LNBs to the adapter and the feed tube.
- **Route the Cables to the Grounding Block** – Attach two grounding blocks to the house and route the cables from the dish to the grounding blocks. Also, route a grounding wire from the grounding block to the central building ground.
- **Run the Cables into the House** – Run the RG-6 cables from the grounding blocks into the house and attach to the multiswitch.
- **Make the Final Connections** – Connect an RG-6 cable to any of the outputs on the multiswitch and to the satellite input(s) on your digital satellite receiver, HDTV, or HD set-top converter.
- **Acquire and Fine-tune the Satellite Signal** – Use the on-screen signal meter to check for a signal. Once the signal is obtained, adjust dish pointing azimuth and elevation *as needed* to achieve maximum signal strength for all satellites.
- **Order Satellite Programming** – Call the service providers to order satellite programming.

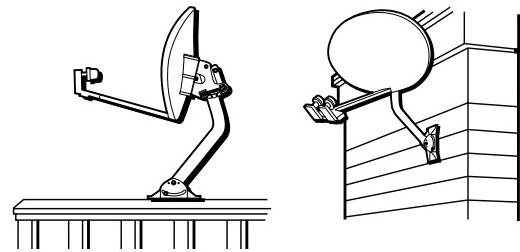
Mounting Options

VERY IMPORTANT: Make sure that the mast is both PLUMB and LEVEL. If the mast is not PLUMB and LEVEL, the elevation, azimuth, and tilt settings you get from on-screen instructions will not be accurate and you may not be able to acquire the signal.

Solid Wood or Lap Siding

Important Considerations:

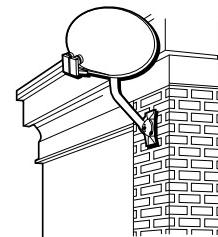
- Do NOT mount the DIRECTV PLUS™ dish where someone might use it as a handrail.
- Do NOT mount the DIRECTV PLUS™ dish on any type of aluminum or vinyl siding.
- Do NOT mount the DIRECTV PLUS™ dish on any type of composite paneling, such as fiber board, particle board, or strand board.
- Do NOT mount the DIRECTV PLUS™ dish under an eave or overhang that may block or partially shadow the DIRECTV PLUS™ dish.
- Make sure the wooden surface is structurally sound and can support the weight of the DIRECTV PLUS™ dish.



Brick or Poured Concrete Surface

Important Considerations:

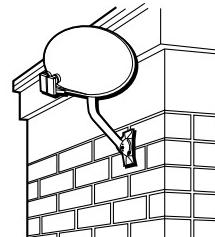
- The wall anchors used must have a strength of at least 300 pounds of pullout pressure. The use of B4015 or equivalent double-expansion anchors is recommended.
- Do NOT mount the DIRECTV PLUS™ dish under an eave or overhang that may block or partially shadow the DIRECTV PLUS™ dish.



A Hollow or Cinder Block Wall

Important Consideration:

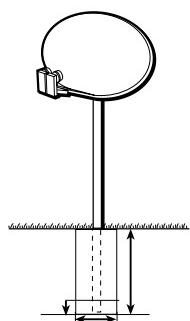
- Do NOT mount the DIRECTV PLUS™ dish under an eave or overhang that may block or partially shadow the DIRECTV PLUS™ dish.



Pole Mount

Important Considerations:

- Do not install the pole in wet or marshy areas.
- The pole must go at least 3 feet below the surface.
- If the length of pipe above ground is too long, guy wires may be needed to increase the stability of the mount in windy conditions.
- You will need to ground the pole in addition to the antenna and coaxial cable.
- The pole that has been secured in the ground with concrete replaces the mounting foot and mast assembly which were supplied with the DIRECTV PLUS™ dish. The DIRECTV PLUS™ dish is held on the pole by the mast clamp.



Preparing for Installation

Should I Do This Myself?

While the installation is not difficult, it does require that you have some experience in electrical wiring and minor construction techniques. Also, you may have to climb a ladder, so you'll want to be comfortable working with heights.

Depending on how you install the DIRECTV PLUS™ satellite dish, you may be required to:

- Use power tools to drill holes in your house
- Determine where utilities such as water pipes, electrical wiring or gas lines are hidden within walls
- Run coaxial cable through a foundation, under floors, or through interior walls
- Ground an antenna and coaxial cable as recommended in the National Electrical Code*.

If you have properly installed a previous satellite, outdoor television antenna, or a garage door opener, then you can be reasonably confident that you can install this system yourself.

If you have not worked with any of these products, then this probably isn't the time to learn about installation techniques. While deciding whether you are right for this job, you should also keep in mind that your DIRECTV PLUS™ satellite antenna has more fine-tuning requirements going beyond those of a single-satellite antenna and it may be more difficult to obtain signal(s).

Consider contacting your local authorized retailer to recommend a professional installer.

General Site Survey

Your DIRECTV PLUS™ antenna receives data from two separate satellites at once; one sending High Definition signals, and one broadcasting standard digital signals. So, to pick up the pair of signals, your DIRECTV PLUS™ antenna must tune to two satellite signals from one mounted position.

Not only can there be NO obstructions between the DIRECTV PLUS™ satellite dish antenna and the satellites, but you must also have the unit mounted exactly plumb and level in order to get HD and standard digital broadcasts from given coordinates.

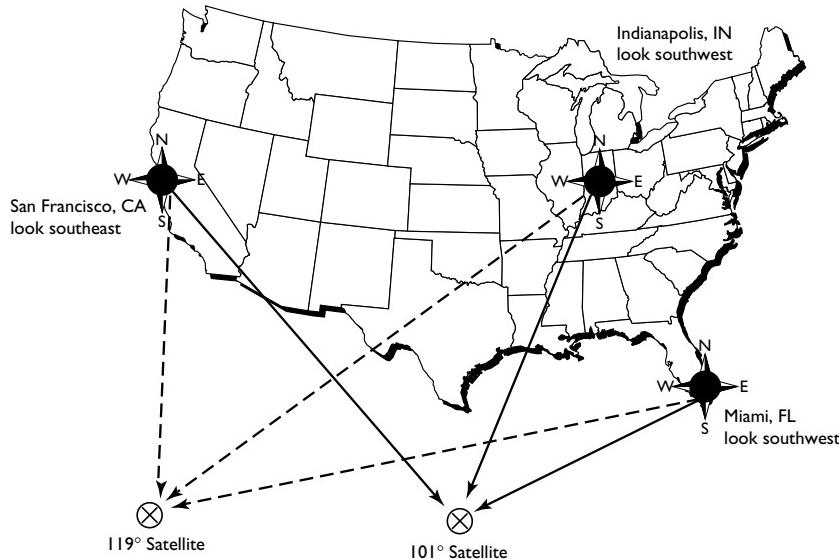
When mounting your DIRECTV PLUS™ satellite antenna, take into consideration future tree growth, house remodeling or additions, and new construction in your area.

- The satellite signal WILL NOT PASS through leaves or branches.
- The satellite signal WILL NOT PASS through glass; don't try to install your DIRECTV PLUS™ dish indoors!

*The National Electric Code is published by the National Fire Protection Association, Batterymarch Park, Quincy, Maryland, 02269. It is also available at many hardware stores and home centers.

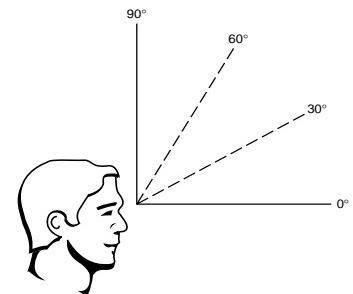
The Satellite Locations

Both satellites are always located south of the United States at approximately 101° and 119° latitude. That means if you live in Miami, you must have a clear line of sight west/southwest; if you live in San Francisco, you must have a clear line south/southeast.



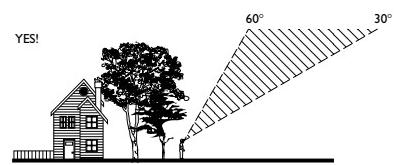
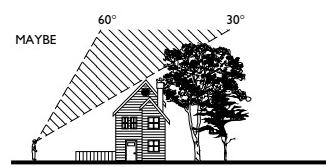
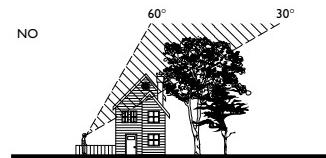
How High Up in the Sky is the Satellite?

Depending on where you live, the satellite will be at an elevation angle between 30 and 60 degrees. Southern states point more upward toward 60 degrees; northern states point more downward toward 30 degrees.



Finding a Clear Line of Sight

1. Go outside and locate at least one site on your property that has a clear view to the satellite. You should be reasonably certain you are pointing toward Texas (unless you're in Texas, in which case you should be looking due south). You may want to use a map.
2. Imagine an arc ranging from 30 to 60 degrees above the horizon.
3. Do you have at least one clear view to the satellite? Remember, no trees, leaves, buildings, or windows can be between the DIRECTV PLUS™ dish and the satellite.



If the answer is **NO**, your site may be unsuitable for installing the satellite system.

If the answer is **MAYBE**, you may want to contact a your local digital satellite dealer for information about having a professional installer conduct a thorough site survey.

If the answer is **YES**, your site should be suitable for installing the system. Go ahead to the next section in this manual.

Preparing for Installation

Finding the Dish Pointing Coordinates

Finding the dish pointing coordinates for your location includes presetting the elevation and tilt. This is done by following directions that appear on your TV screen. You need to make sure that your digital satellite receiver, HDTV, or HD set-top converter is connected and working so that you can see these menu directions on a television screen.

See the User's Manual that came with your digital satellite receiver, HDTV, or HD set-top converter for more information about finding the antenna's pointing coordinates.

Using the Dish Pointing Menu Screen

You need to use your digital satellite receiver, HDTV, or HD set-top converter's on-screen menu feature to obtain the precise dish pointing coordinates for your location. You can find these numbers by navigating through these menus.

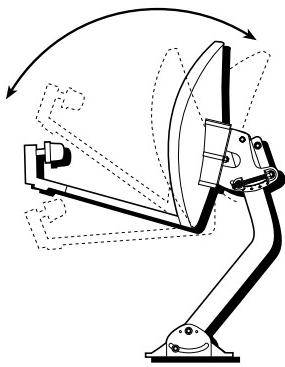
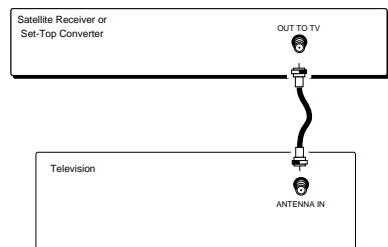
Because this DIRECTV PLUS™ satellite dish antenna can be used with several different types of products, we cannot show you the specific instructions for obtaining dish pointing information here. Specific instructions for using on-screen menus can be found in the manual that came with your HDTV, set-top converter, or satellite receiver.

Recording the Coordinates

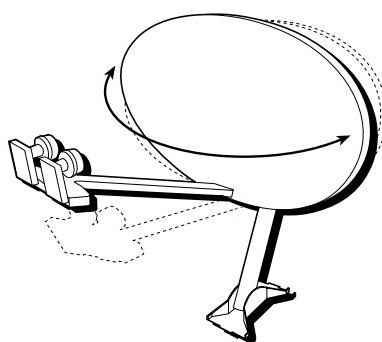
When you've obtained the coordinates, record the elevation, azimuth, and tilt (polarization) numbers below.

Tip

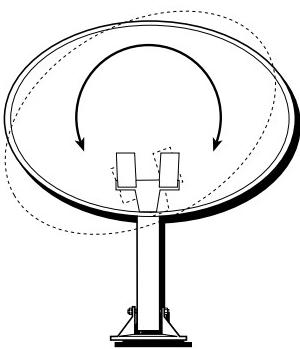
If you are using a digital satellite receiver or HD set-top converter, you can make a simple connection as shown below to get your dish pointing coordinates now, and to view the signal meter later in the installation process.



Elevation is the up/down angle that the dish is pointed.



Azimuth is side-to-side direction that the dish is pointed.



Tilt (polarization) is the circular rotation of the dish itself, like a steering wheel.

Elevation _____

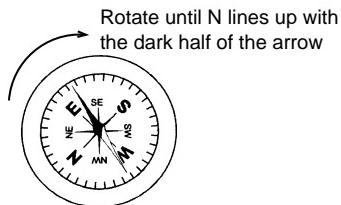
Azimuth _____

Tilt (polarization) _____

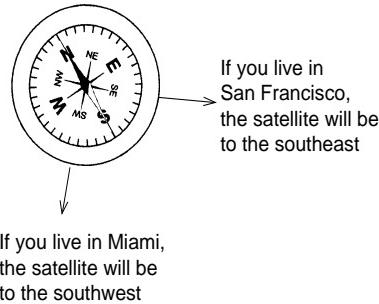
Precise Site Survey

Based on your general site survey, you probably already know where you want to mount your DIRECTV PLUS™ dish, but it's a good idea to follow the procedures outlined in this section in order to make sure that your site selection is a good one.

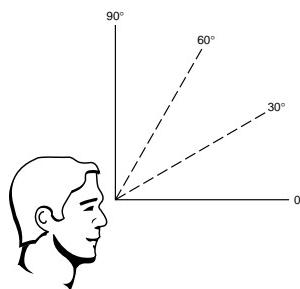
1. Go outside to your install site and hold a compass flat in the palm of your hand. Hold your hand still until the needle stops moving (the dark or colored half of the compass needle always points north).
2. Rotate the compass so that the "N" (for north) is directly under the dark part of the compass needle. Your compass is now aligned with north. The marks around the outside edge of the compass represent azimuth degrees you will point your antenna to.



3. Locate the tick mark on the compass edge that corresponds to the azimuth number you wrote down. This is the direction of your azimuth setting (the direction the DIRECTV PLUS™ dish will need to be pointed to receive signals from the satellites).



4. Raise your arm to approximately the elevation angle recorded earlier to make sure that there are no obstructions in the signal path.



5. Repeat this survey in several places on your property if necessary until you find the best mounting location.

Note

You may want to review the section "Mounting the Mast" to consider the mounting options available to you before completing your precise site survey.

Tip

Try to keep the compass away from any metal objects. Metal objects can cause inaccurate compass readings.

WARNING

Do NOT install the DIRECTV PLUS™ dish near power lines, electric lights or power circuits. Contact with power lines, lights or power circuits may be fatal. It is strongly recommended that the DIRECTV PLUS™ dish be located more than 20 feet from overhead power lines.

Preparing for Installation

A Final Site Survey

Now that you've conducted a precise site survey using the dish pointing coordinates for your location, you should double-check one more time to make sure you have a clear view in the direction of the satellites.

I Don't have a clear view to the satellite.

If you don't have a clear view to the satellites, then your site may not be suitable for installing the satellite system. A professional installer may have an alternative solution—consider contacting your satellite system dealer to find the name of an authorized satellite system installer.

I'm Not sure If I have a Clear View

If you're not certain whether you have a clear view to the satellite, you have two choices :

- Continue with the installation and determine whether you have a clear view to the satellite by testing the system.
- Contact your satellite system dealer to find the name of an authorized satellite system installer who can help you verify that your property is suitable for installation.

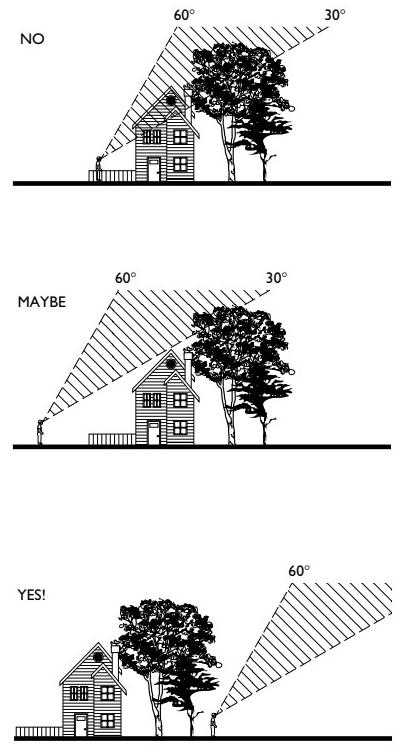
I Have A Clear View to the Satellite

Your site should be suitable for installing the satellite system. Continue with the installation.

Estimating Cable Requirements

Now that you've decided on the exact mounting site, you need to decide where you want the cables to enter the house. The next step is to figure out approximately how much cable you are going to need.

1. Locate the central building ground. You will ground the antenna (using the cable grounding block) to a single point in the central building ground. The following is a list of acceptable building ground points:
 - Grounded interior metal cold water pipe within five feet of the point where the cable(s) enter the building
 - Grounded metallic service raceway
 - Grounded electrical service equipment enclosure
 - Eight-foot grounding rod driven into the ground (only if bonded to the central building ground by #6 or heavier bonding wire)
 - Other acceptable grounding electrodes that comply with sections 250 and 810 of the National Electrical Code (NEC).
2. Choose a location to mount the grounding block. The block should be as close as possible to the point where the cable(s) will enter the house.
3. Decide where inside the house you plan to put the HD receiver.
4. Measure and record your cable requirements in the spaces provided on the following page.



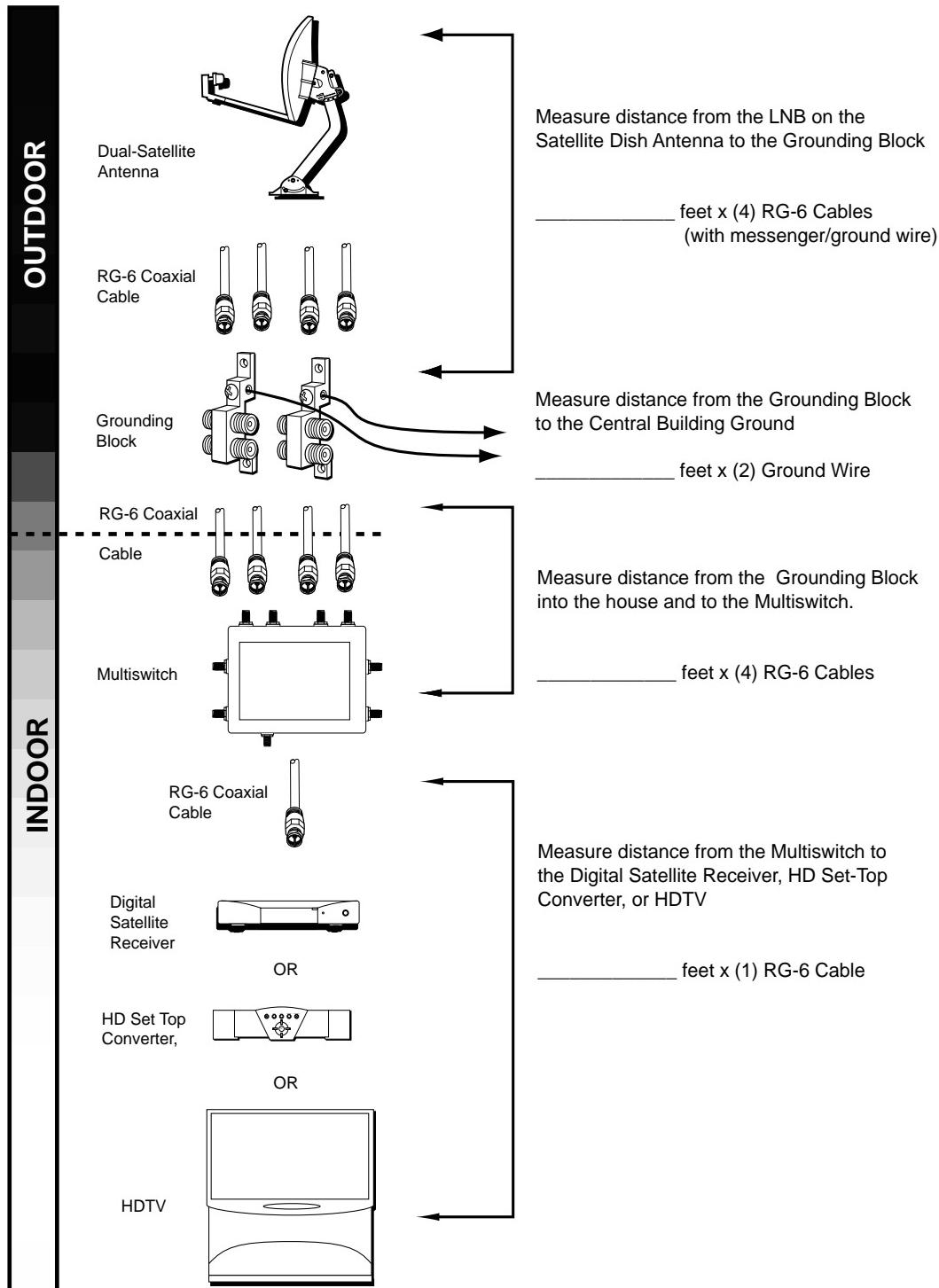
A Few Words About Grounding the System

Grounding the satellite system to the central building ground helps protect it and other components from lightning damage. Dish installation should comply with local codes and the National Electrical Code (NEC). Grounding the satellite system is something you can probably do yourself. But if you're not sure, you should contact a qualified electrician.

Preparing for Installation

This diagram shows “typical” installation steps. It illustrates the minimum of cables needed to give a signal to one digital satellite receiver, HDTV, or HD set-top converter.

The information on the following pages takes you through the cable estimating process step-by-step.



Tip

Measure once and multiply by four. You will need four cables of that length to run from the dish antenna to the grounding block.

Note

You must use RG-6 coaxial cable(s) from the satellite dish to the SATELLITE IN jack on the digital satellite receiver, HDTV, or HD set-top converter. This includes to and from the multiswitch. Other types of coaxial cable, such as that used for cable TV (RG-59) will not work for your HD satellite system.

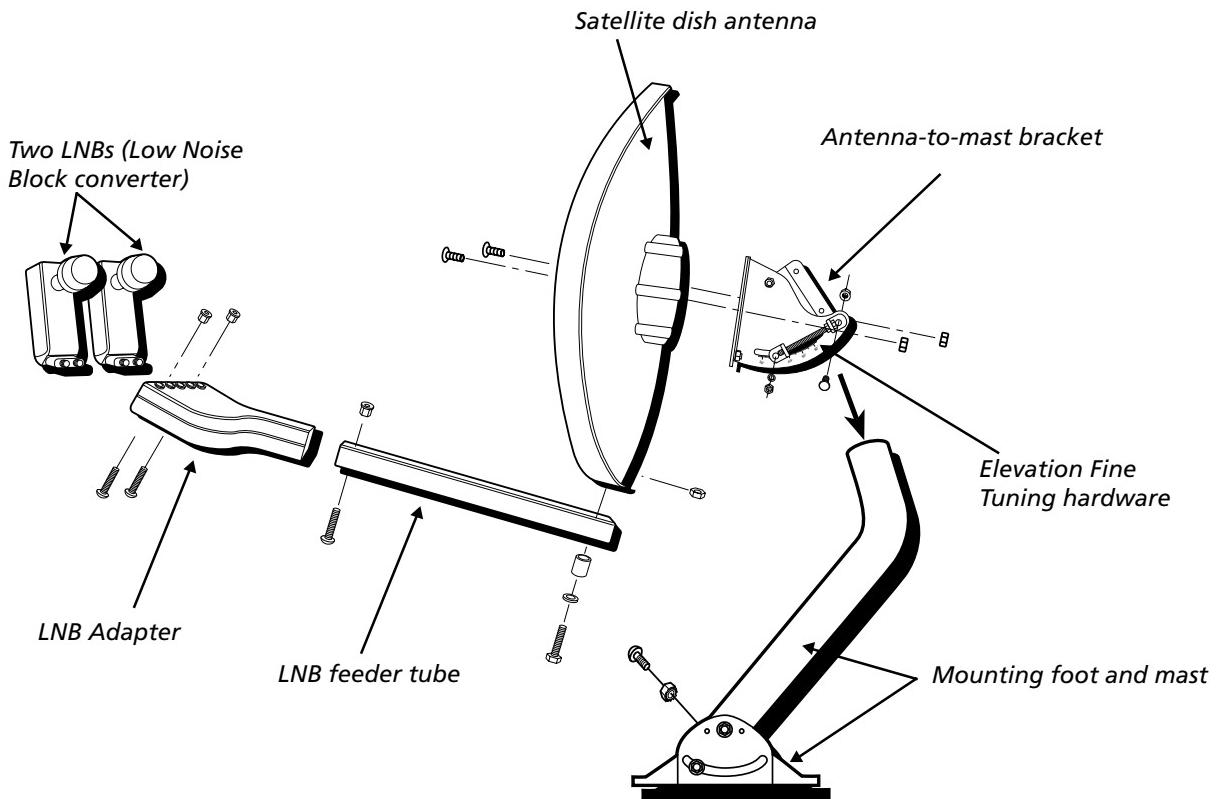
Note

If your total RG-6 coaxial cable length from the dish to the HD unit is more than 112 feet per coax cable, you may need an additional installation component, such as a line amplifier, to compensate for the longer cable length.

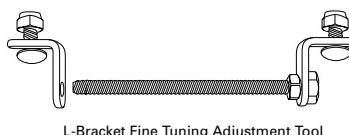
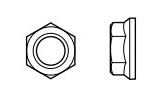
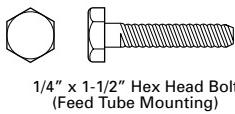
Preparing for Installation

DIRECTV PLUS™ Dish Assembly Overview

Use this page both as a parts lists for your HD satellite antenna, and a general overview of how the parts fit together; but DO NOT ASSEMBLE THE DISH YET.



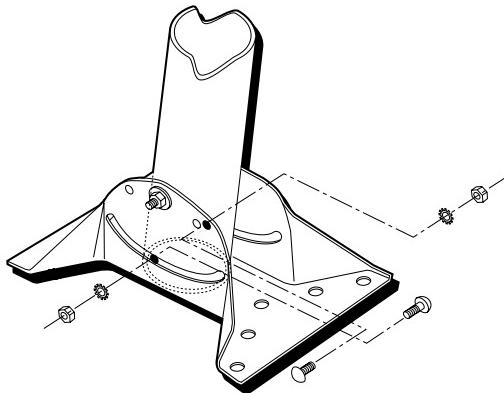
Hardware Included:



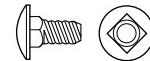
Preparing for Installation

Securing the Mast Foot

1. If you plan to use the mast foot, use two (2) 1/4" x 1/2" carriage bolts, and two (2) 1/4" flange nuts to join the pieces through the bolt holes in the mast and the curved space of the mounting foot. Place one bolt on each side. Secure the bolts with a locking washer and locking nut. Leave the assembly loose enough to allow movement in the curved slot without damage to the painted surface on each side.



Mast Foot Hardware



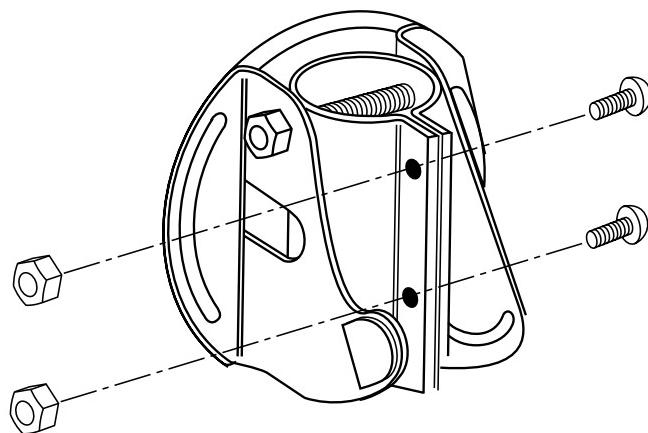
1/4" x 1/2" Long Carriage Head Bolt
(Mast Adjusting Bolts)



1/4" Hex Flange Nut

Secure the Antenna Mast Clamp:

Use two (2) 1/4" bolts and two (2) 1/4" flange nuts to join the antenna clamp with the mast. *Do not tighten the bolts all the way*. You will move the DIRECTV PLUS™ dish side-to-side to adjust the azimuth.



Mast Clamp Hardware



1/4" x 7/8" Long Carriage Head Bolt
(Azimuth Clamp Bolt)



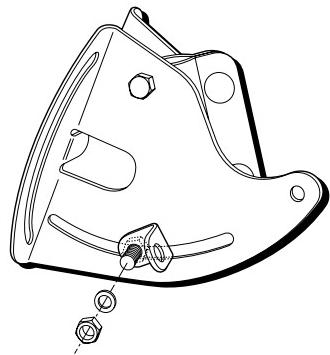
1/4" Hex Flange Nut

Preparing for Installation

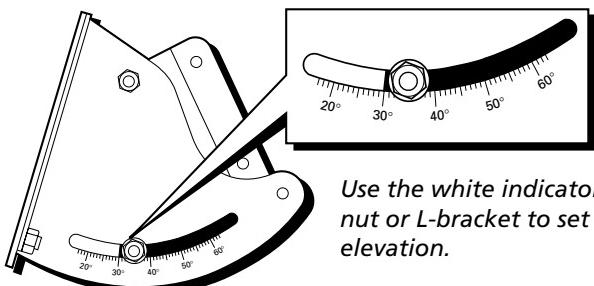
Setting the Elevation and Attaching the Fine Tuning Adjustment

Use the elevation setting coordinate you wrote down on page 8 to preset the elevation of the dish, and then attach the fine tuning adjustment tool.

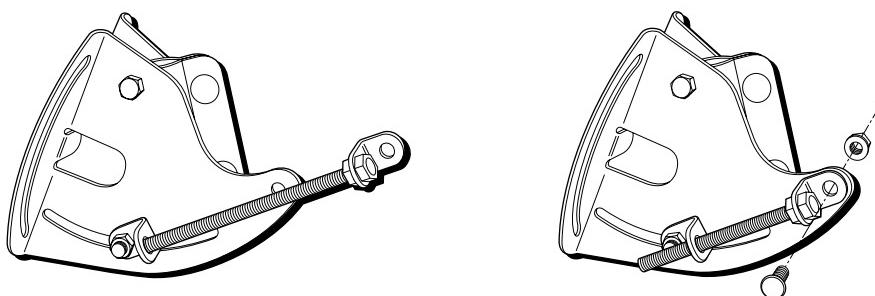
1. Use a 1/4" x 1/2" carriage bolt, a washer, and a flange nut to attach the L-bracket to the elevation slot.



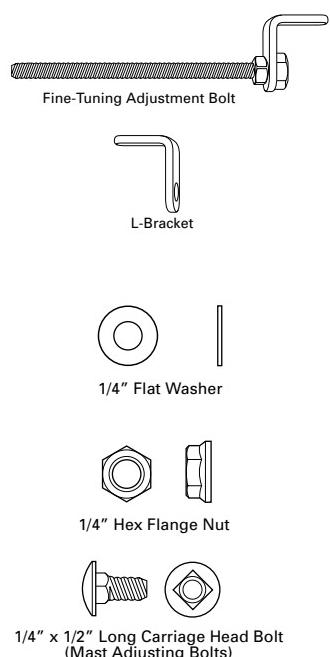
2. Rotate the support sleeve so that the elevation indicator (white line), NOT the bolt or the L-bracket, lines up with the tick mark on the mast corresponding to the elevation setting you recorded earlier.
3. Tighten the flange nut securely and then secure a second 1/4" x 1/2" carriage bolt, washer and flange nut on the opposite side.



4. Thread the bolt from the second L-bracket through the first L-bracket until the bracket lines up with the hole on the mounting assembly. Double-check your elevation setting and adjust if necessary.
5. Use a 1/4" x 1/2" carriage bolt, a flat washer, and a flange nut to attach the L-bracket to the mast clamp.,



Fine Tuning Adjustment Tool Hardware

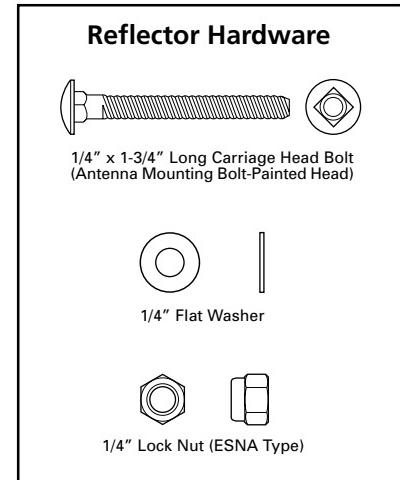
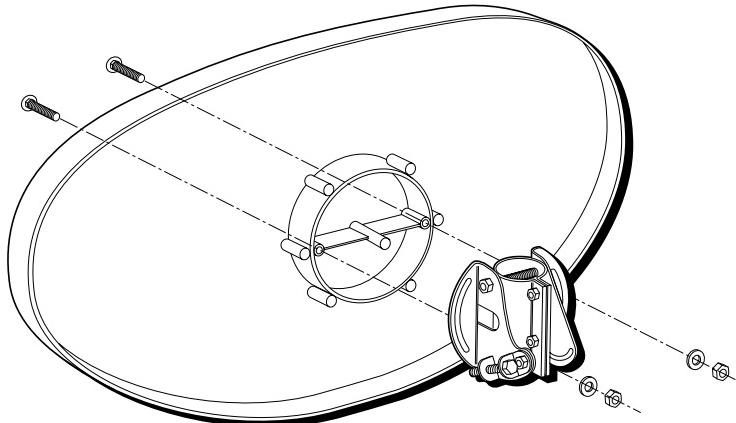


Tip

To get the correct elevation, line up the painted edge inside the curved groove of the clamp with the degree marker. Do NOT use the bolt.

Attaching the Mast Clamp to the DIRECTV PLUS™ Antenna

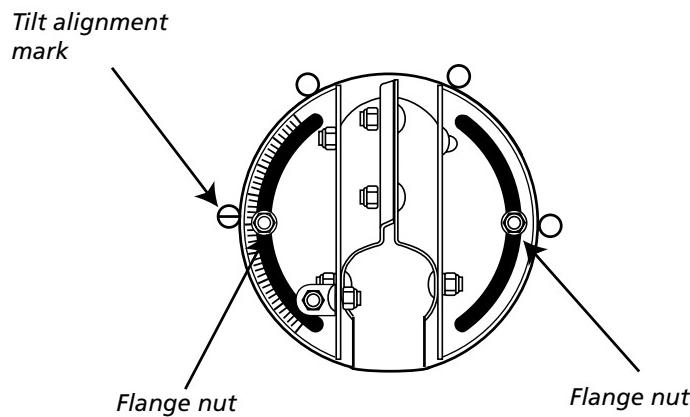
1. Insert the two 1/4" x 1 3/4" carriage bolts through the holes on the front of the dish.
2. Attach the mast clamp to the back of the dish, passing the bolts through the slots used to set the tilt.
3. Place a flat washer over each bolt and then secure the clamp using 1/4" self-locking nuts (ESNA type). Do not tighten all the way just yet.



Setting the Tilt (Polarization)

Tilt allows your satellite receiver to tune to two separate satellites at once and is one of the more crucial steps to achieving strong reception from both satellites.

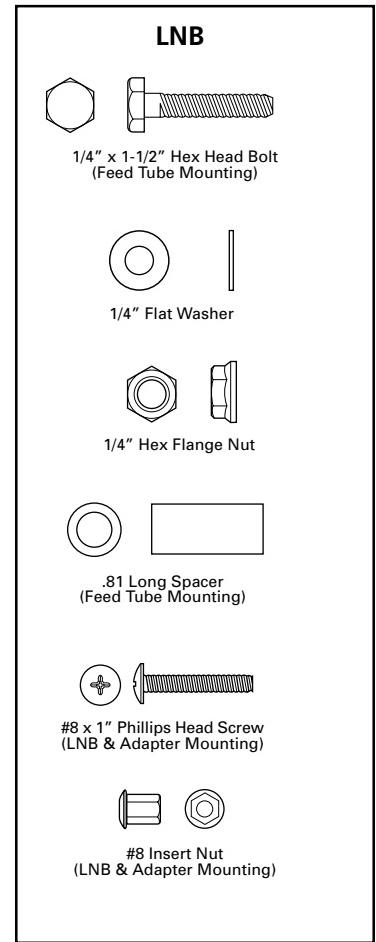
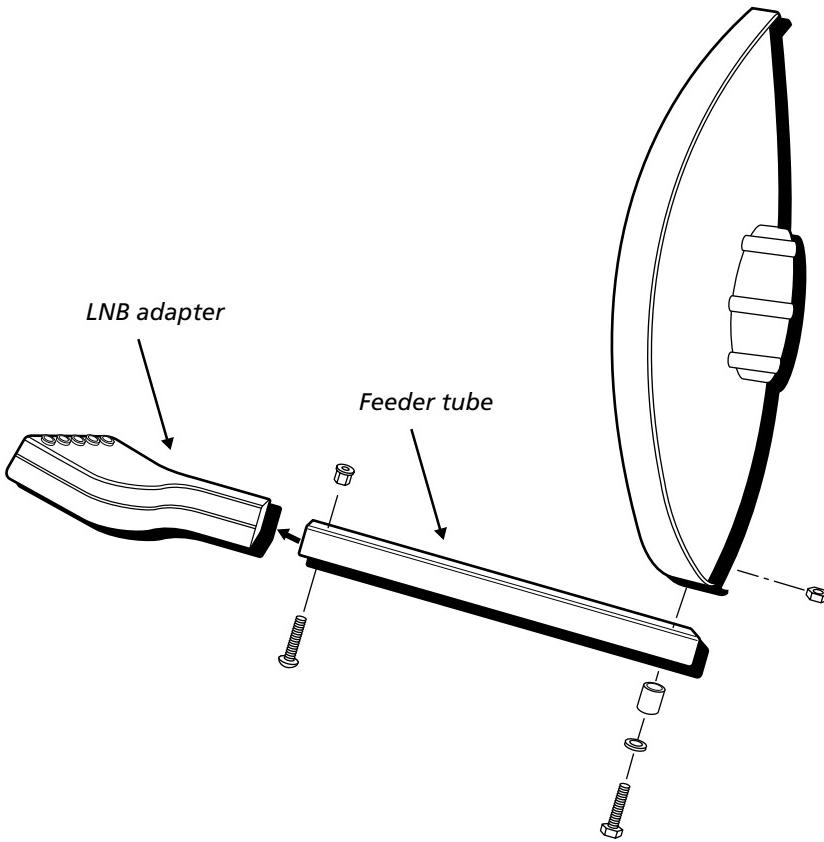
1. Set the tilt so that the correct degree of tilt aligns with the mark on the left side of the mast clamp. Note that each mark indicates two degrees of tilt.
2. Securely tighten the flange nuts.



Preparing for Installation

Attaching the LNB Support Arm and Adapter

1. Attach the rectangular LNB feeder tube to the antenna socket making sure that the round hole for the spacer is positioned as shown in the diagram below. Tighten the bolt while holding the nut.



2. Attach the LNB adapter to the feeder tube and secure it by using a #8 hex insert and a 1" long phillips head screw.

Move On to the Next Section

Now that you have all of the preliminary installation steps completed, go on to the next section "Mounting the Mast."

Mounting the Mast

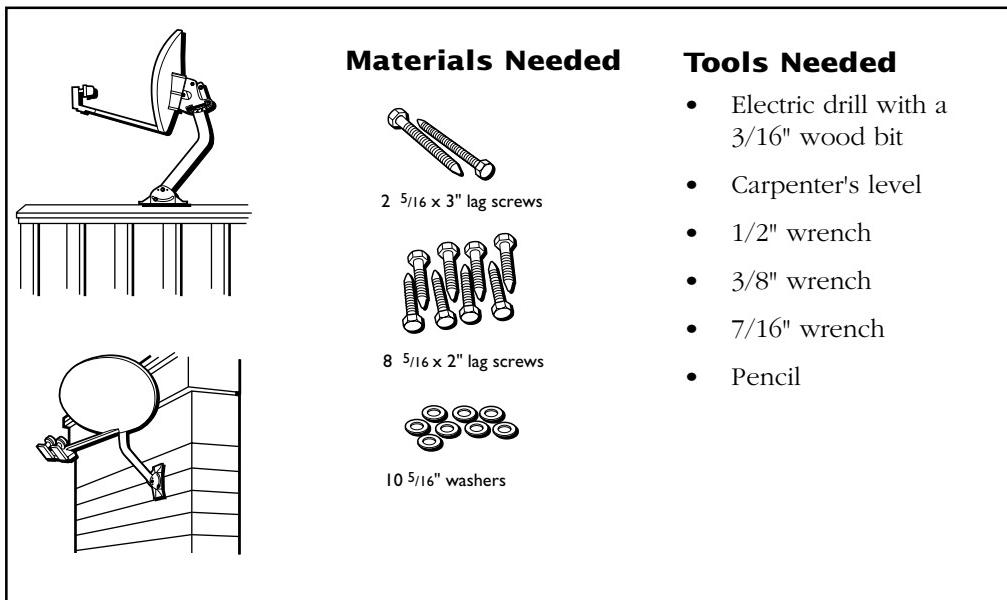
Chapter Overview:

- Mounting The Mast On Solid Wood
Or Lap Siding
- Mounting the Mast on Brick or
Poured Concrete
- Mounting the Mast on a Hollow
or Cinder Block Wall
- Mounting the DIRECTV PLUS™ Dish
On A Pole



Mounting the Mast

Mounting The Mast On Solid Wood Or Lap Siding



Important Considerations:

- Do NOT mount the DIRECTV PLUS™ dish where someone might use it as a handrail.
- Do NOT mount the DIRECTV PLUS™ dish on any type of aluminum or vinyl siding.
- Do NOT mount the DIRECTV PLUS™ dish on any type of composite paneling, such as fiber board, particle board, or strand board.
- Do NOT mount the DIRECTV PLUS™ dish under an eave or overhang that may block or partially shadow the DIRECTV PLUS™ dish.
- Make sure the wooden surface is structurally sound and can support the weight of the DIRECTV PLUS™ dish.

DANGER

AVOID Power Lines!

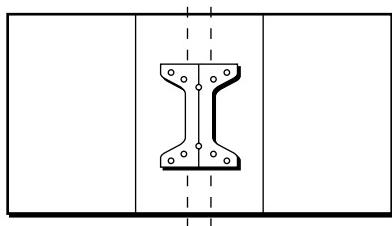
When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits may be fatal. It is recommended that the DIRECTV PLUS™ dish be located more than 20 feet from overhead power lines.

Mounting Instructions

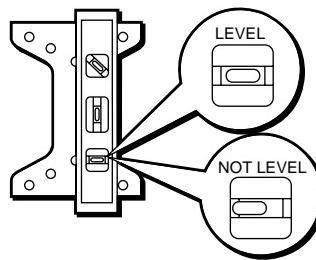
1. Locate the center of a stud where you want to mount the mast foot. Make sure you locate and secure the mounting foot to the center of a wall stud. **Do not mount the DIRECTV PLUS™ dish near the edge of a stud.**
2. Hold the mounting foot in a position so the center line is centered on a stud or solid wood surface.
3. If you are mounting on a sloped or vertical surface, use a level to verify that the center line is perfectly vertical.
4. Use a pencil to mark the two center holes and the eight outside corner holes of the mounting foot.

Tip

To locate a stud underneath panel siding, locate the nails securing the panel to the wall. The nails usually align with the center of the stud and provide an easy guide.

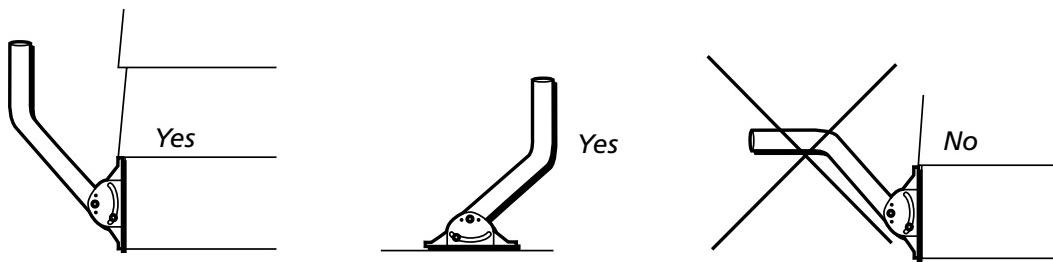


Step 2: Center the foot on the stud.



Step 3: Make sure the mounting foot is level.

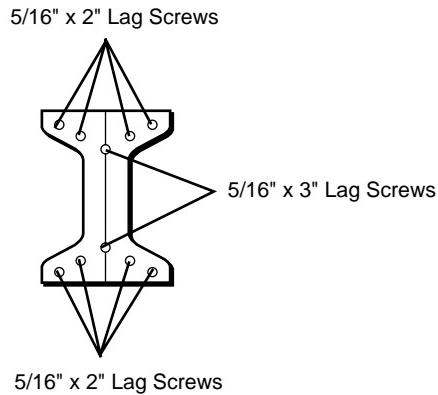
5. Remove the mounting foot and drill two 3/16" holes in the two center hole locations and four 3/16" holes in the four outside corner locations.
6. Use a wrench to loosen the nuts on the mounting foot so that you can rotate the mast to access both of the center mounting holes.
7. Hold the mounting foot over the holes so that the top part of the mast will rotate and point straight up. The mast needs to be perfectly plumb and level in order for the dish to receive a satellite signal.



Step 7: Make sure that the top of the mast will point straight up.

Mounting the Mast

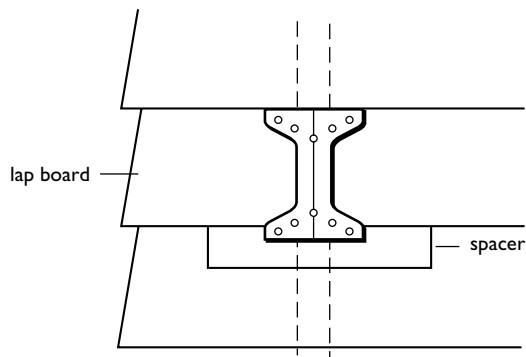
8. Install two 5/16" x 3" lag screws into the two center holes on the mounting foot. Securely tighten the screws into the center of the wood beam.
9. Put washers on the 5/16" x 2" lag screws, insert the screws into the four outside holes and securely tighten them.
10. Go on to the next section, "Final Installation," to complete the installation process.



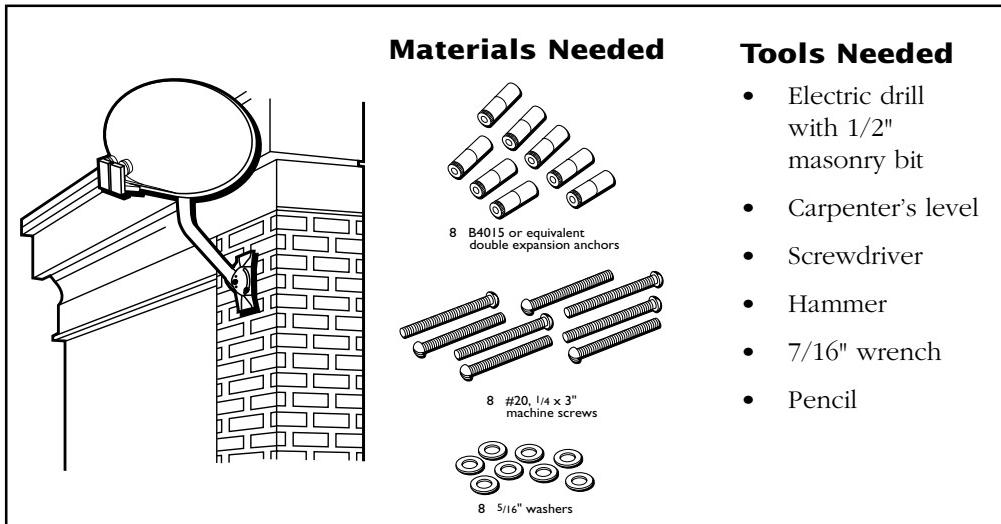
Steps 8 & 9: Inserting the lag screws.

Installing a Spacer

When the mounting foot spans two pieces of siding, it should be positioned so most of the foot is on the top board. A spacer should be installed to help hold the bottom of mounting foot in place. The spacer can be made of either solid wood or plastic.



Mounting the Mast on Brick or Poured Concrete



IMPORTANT Considerations

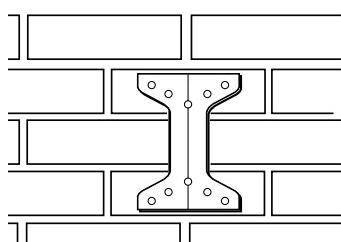
- The wall anchors used must have a strength of at least 300 pounds of pullout pressure. The use of B4015 or equivalent double-expansion anchors is recommended.
- Do NOT mount the DIRECTV PLUS™ dish under an eave or overhang that may block or partially shadow the DIRECTV PLUS™ dish.

Mounting Instructions

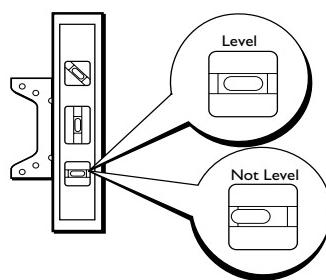
- Hold the mounting foot in position on the mounting surface.
- If you are mounting on a vertical or sloped surface, use a carpenter's level to ensure that the center line is vertical. This is an important step to insure that the DIRECTV PLUS™ satellite dish will stand exactly plumb and level.

DANGER

AVOID Power Lines!



Step 1: Hold the mounting foot in position.

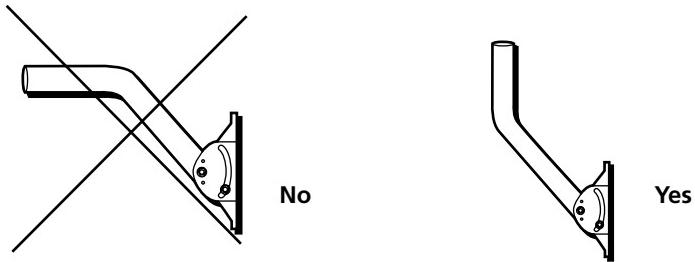


Step 2: Make sure the mounting foot is level.

When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits *may be fatal*. It is recommended that the DIRECTV PLUS™ dish be located more than 20 feet from overhead power lines.

Mounting the Mast

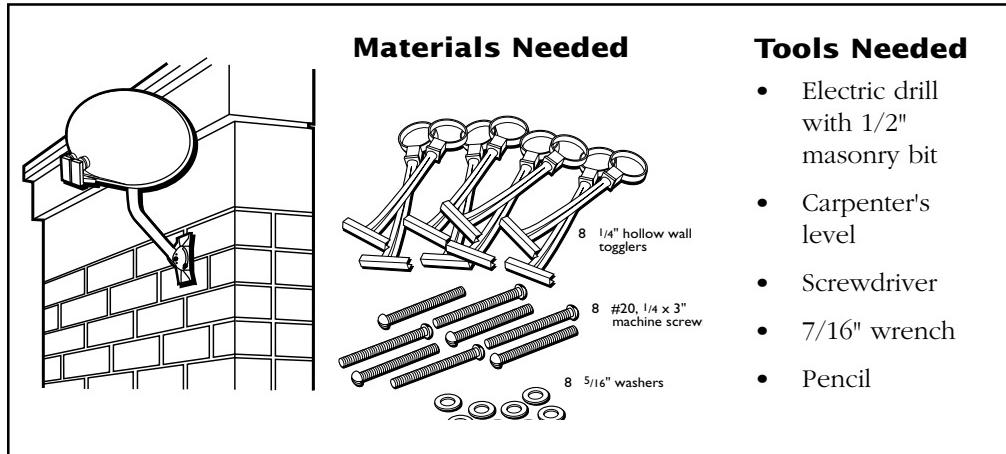
3. Mark the eight outside holes on the mounting foot.
4. Remove the foot and drill eight (8) 1/2" holes in the locations you marked using a specialty masonry drill bit.
5. Insert four (8) B4015 or equivalent double-expansion anchors.



Step 7: Make sure that the top of the mast will point straight up.

6. Use a wrench to loosen the nuts on the mounting foot so that you can rotate the mast to access both of the center mounting holes.
7. Hold the mounting foot over the holes so the top part of the mast will rotate and point straight up.
8. Insert and tighten the machine screws.
9. Go on to the next section, "Final Installation," to complete the installation process.

Mounting the Mast on a Hollow or Cinder Block Wall



DANGER

AVOID Power Lines!

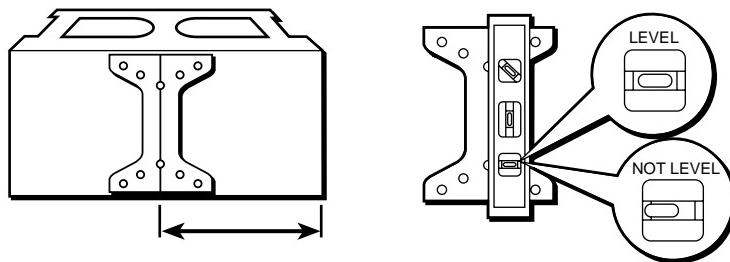
When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits may be fatal. It is recommended that the DIRECTV PLUS™ dish be located more than 20 feet from overhead power lines.

IMPORTANT Consideration

- Do NOT mount the DIRECTV PLUS™ dish under an eave or overhang that may block or partially shadow the DIRECTV PLUS™ dish.

Mounting Instructions

- When installing togglers in cinder blocks, it is important to position them in the core of the block. To position the foot on the wall, measure $7\frac{1}{2}$ " from one edge of the block and mark the center of the block.
- Center the mounting foot on the mark you made.
- Level the center line of the mounting foot using a bubble level.
- Mark the eight outside corner holes.



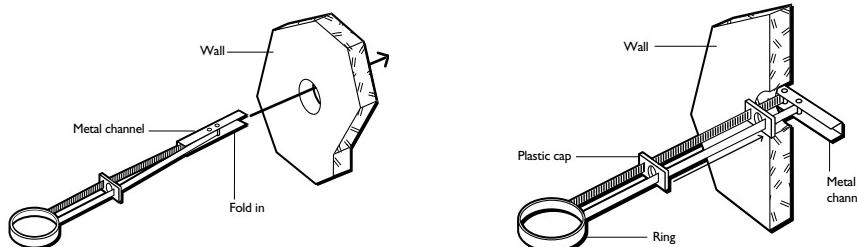
- Remove the mounting foot. Drill a 1/2" hole at the marked locations.

Continued on next page

Mounting the Mast

6. Install the togglers:

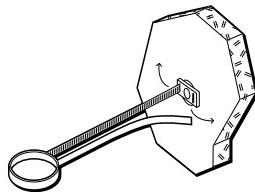
- a. Carefully fold one end of the metal channel along the plastic straps. Hold the metal channel flat against the plastic straps and slide it through the hole.
- b. Pull the ring so the metal channel rests flush behind the wall. Hold the ring tight and slide the plastic cap along the straps until the cap is flush with the wall.



Step 6a: Slide the metal channel through the hole.

Step 6b: Make sure the plastic cap is flush with the wall.

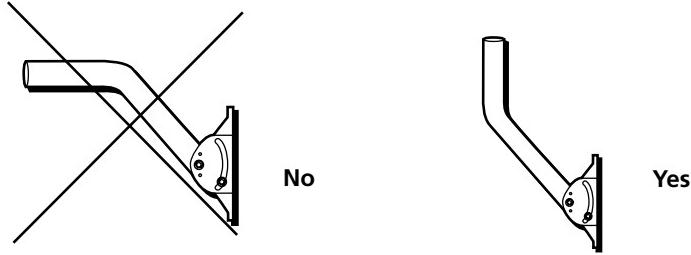
- c. Push the straps side-to-side to snap them off flush with the wall.



Step 6c: Snap off straps flush with the wall.

- d. Repeat for all eight holes.

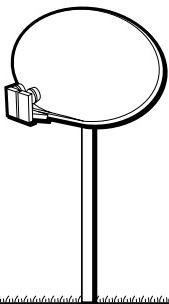
7. Use a 7/16" wrench to loosen the nuts on the mounting foot so you can rotate the mast to access both of the center mounting holes.
8. Hold the mounting foot over the holes so the top part of the mast will rotate and point straight up. For the final mounting, you should use a carpenter's level or a circular level to assure that the mast is plumb and level.



Step 8: Make sure that the top of the mast will point straight up.

9. Place washers on each of eight #20, 1/4" x 3" machine screws and attach the mounting foot to the wall. Securely tighten the screws.
10. Go on to the next section, "Final Installation," to complete the installation process.

Mounting the DIRECTV PLUS™ Dish On A Pole



Materials Needed

- (1) galvanized steel pipe with a measured outer diameter of $2\frac{3}{8}$ "
- (3) bags quick-setting concrete

Tools Needed

- Carpenter's level
- Screwdriver
- Hammer
- Hacksaw
- Shovel or post hole digger
- Pencil

Important Considerations:

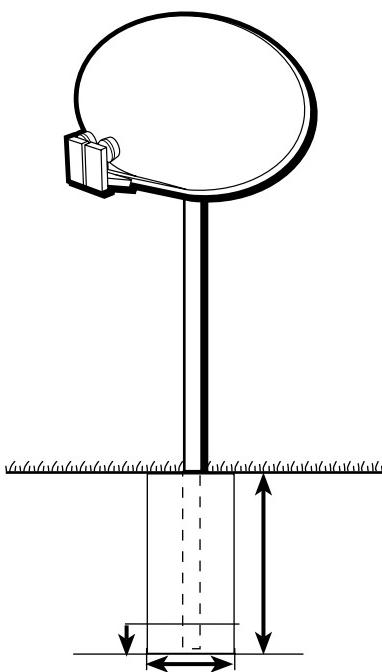
- Do not install the pole in wet or marshy areas.
- The pole must go at least 3 feet below the surface.
- If the length of pipe above ground is too long, guy wires may be needed to increase the stability of the mount in windy conditions.
- You will need to ground the pole in addition to the antenna and coaxial cable.
- The pole that has been secured in the ground with concrete replaces the mounting foot and mast assembly which were supplied with the DIRECTV PLUS™ dish. The DIRECTV PLUS™ dish is held on the pole by the mast clamp.

Mounting Instructions

1. Dig a hole 36" deep and 8" to 12" wide at the mounting location.

The depth of the hole must extend at least 6" below the frost line. For most installations, a pole 6' long is sufficient, since this allows 3' of the pole to be below the ground and 3' above ground.

Continued on next page



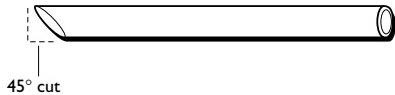
DANGER

AVOID Power Lines!

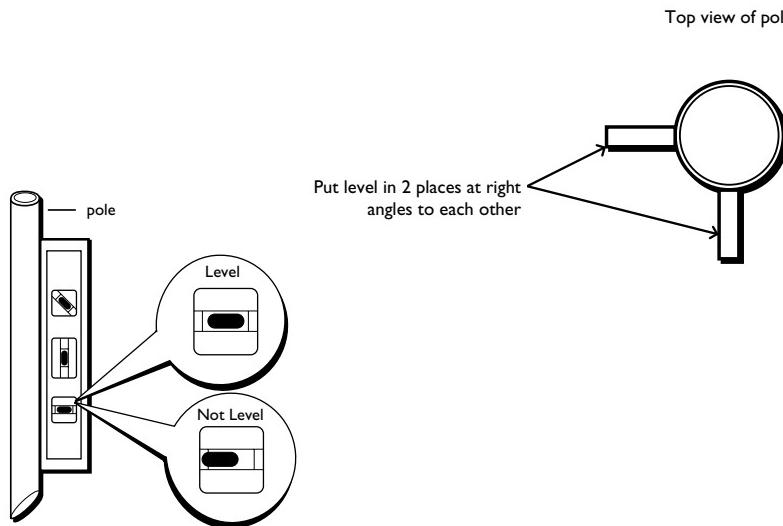
When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits may be fatal. It is recommended that the DIRECTV PLUS™ dish be located more than 20 feet from overhead power lines.

Mounting the Mast

2. Use a hacksaw to cut a 45 degree angle at the bottom of the pole. This will prevent the pole from rotating in the concrete over time.
3. Place the pole in the hole and use a small amount of dirt or stones to hold the pole upright. You may need to attach guy wires to help keep the pole upright.



4. You can level the pole using the a carpenter's level taking readings in two spots 90 degrees from each other on the sides as shown below. A circular bubble level is recommended for this task though as it will tell you if the mast is plumb and level from all angles with just a single reading. Level the pole at two different locations that are at right angles to each other.
5. Fill the hole with quick drying cement. Stop when the cement is about two inches from the top of the hole.
6. Let the cement completely dry before you mount the dish on the pole.
7. Go on to the next section, “Final Installation,” to complete the installation process.



Tip

Most hardware stores should carry an inexpensive circular bubble level. These inexpensive levels can tell you when the mast is plumb and level in all directions with just one reading.

Final Installation

Chapter Overview:

- **Leveling the Mast**
- **Final DIRECTV PLUS™ Dish Assembly**
- **Routing and Grounding the Cables**
- **Running Cable Into the House**
- **Making the Final Connections**
- **Acquiring and Fine Tuning the Signal**



Final Installation

Leveling the Mast

Making sure the mast is plumb and level is one of the most important steps in installation. If the mast is not plumb and level, the elevation, azimuth, and polarization settings you get from on-screen instructions will not be accurate. This makes it difficult to obtain the satellite signal(s).

The mast must be even in both the side-to-side and the front-to-back directions. Side-to-side leveling determines whether the mounting foot is level. Front-to-back leveling determines whether the mast is plumb and level.

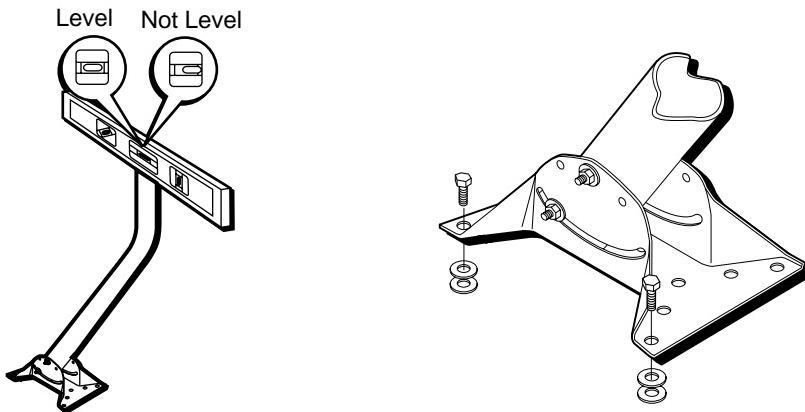
Leveling Side-to-Side

1. If you mounted the mast on a vertical surface, such as a wall, you leveled the mast side-to-side when you mounted the mast foot. Skip to “Leveling Front-to-Back” on the next page.
2. To check whether the mast is level side-to-side, place a carpenter’s level on the mast as shown in figure A.
3. Is the bubble centered in the level’s window?

If YES — Continue to “Leveling Front-to-Back”.

If NO —

- a) If the bubble is not centered, determine which side of the mounting foot needs to be raised.
- b) Unscrew the lag or machine screws from that side of the mounting foot.
- c) Place washers between the mounting foot and the mounting surface. Use enough washers to level the mounting foot.
- d) Secure the mounting foot with the lag or machine screws.



STEP 2: Verify that the mast is level side to side.

STEP 3: If the mast is not level, add washers to level the foot

IMPORTANT

Making sure the mast is plumb and level is one of the most important steps in installation. If the mast is not plumb and level, the elevation, azimuth, and polarization settings you get from on-screen instructions will not be accurate. This makes it difficult to obtain the satellite signal(s).

Tip

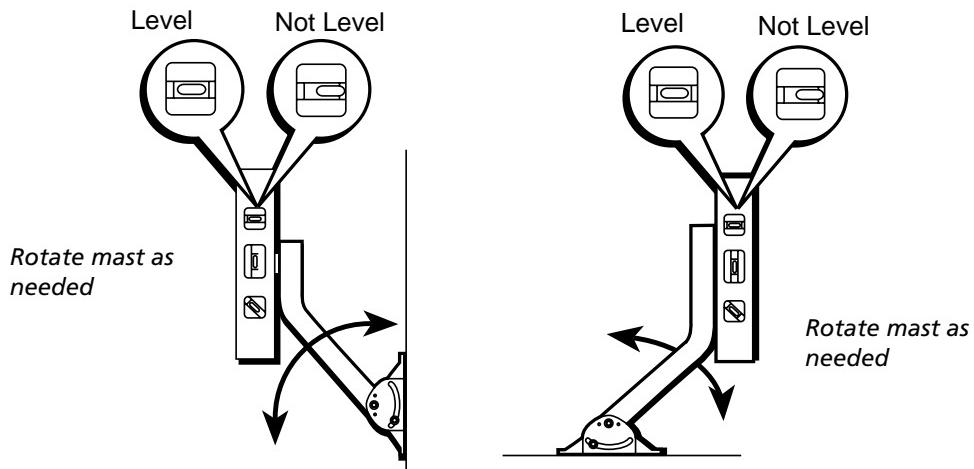
Any hardware store should have an inexpensive circular bubble level which can tell you when the mast is plumb and level in all directions at once.

CAUTION

Use caution when installing, adjusting or dismantling the DIRECTV PLUS™ dish and mast. The weight of the dish may cause the DIRECTV PLUS™ dish and mast to swing down and strike you, a bystander or nearby objects. This could cause personal injury or damage to the dish. Never insert your fingers inside the mast. Always grip the mast around its outside circumference.

Leveling Front-to-Back

1. Loosen the two bolts securing the mast to the mounting foot so the mast moves freely.
2. Place a bubble level on the mast as shown in the figure. Move the mast so the bubble is centered in the level's window.

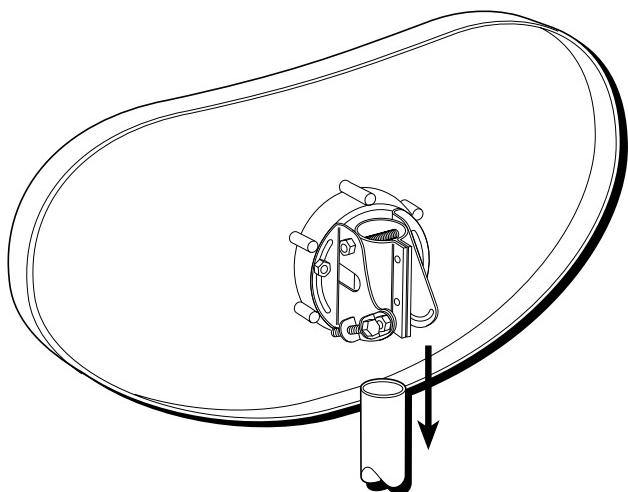


3. Tighten the two bolts securing the mast to the mounting foot.

Final DIRECTV PLUS™ Dish Assembly

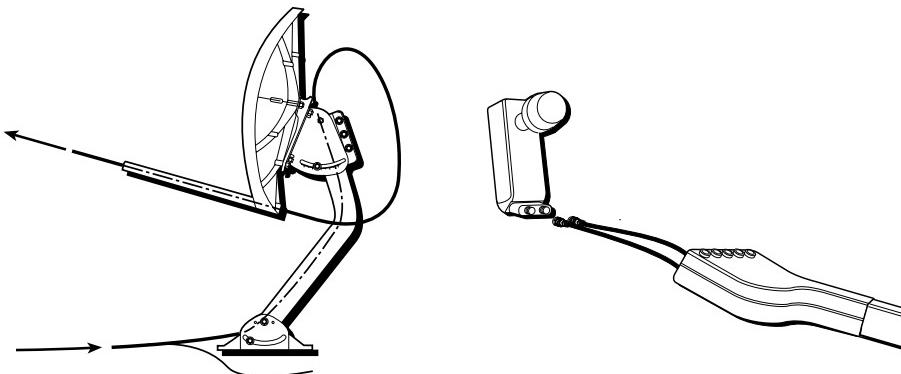
1. Attach the reflector to the support arm:

The top of the mast should slip on easily into the antenna clamp. Make sure that the top of the mast has reached the pivot bolt running through the top of the antenna clamp collar. The antenna should move from side to side easily once it is on top of the support arm (Make sure that the mounting foot assembly is tightened before setting the antenna on top).



Final Installation

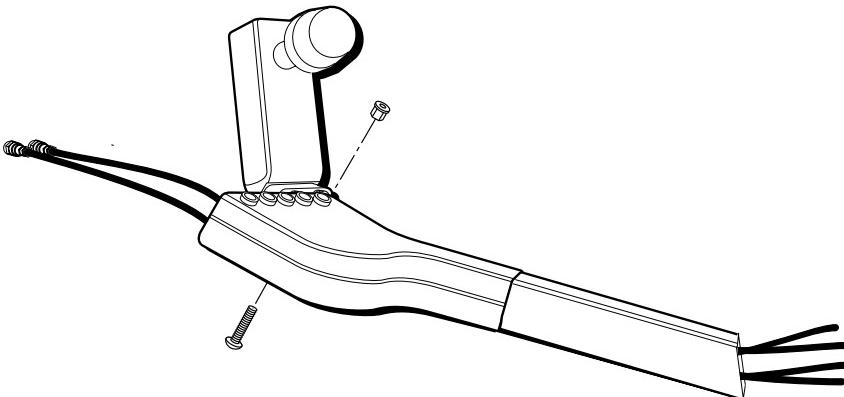
2. If your cables are not marked, you may want to mark each cable with masking tape so that you know which cables to attach to each LNB, and subsequently to the multiswitch.
3. Separate the messenger (ground) wire from the coaxial cables. Push only the coaxial cable through the bottom of the mast and out the top. Pull about 2 feet of cable out of the top. Loop the cable and push it through the LNB support arm as shown below.
4. Place some silicone grease on the LNB connector and connect the ends of the coaxial cables to the LNB connection jacks for Antenna A (101° satellite).



Step 2: Route the cables through the mast.

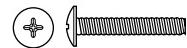
Steps 3-4: Connect the coaxial cables to the LNB.

5. Insert the end of the LNB into the end of the LNB adapter (push any extra coaxial cable back through the support arm).
6. Secure each the LNB by inserting a #8 hex nut in the top of the adapter and screwing in a phillips head screw through the bottom of the adapter.

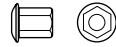


Steps 5-6: Secure the LNB to adapter.

LNB Hardware

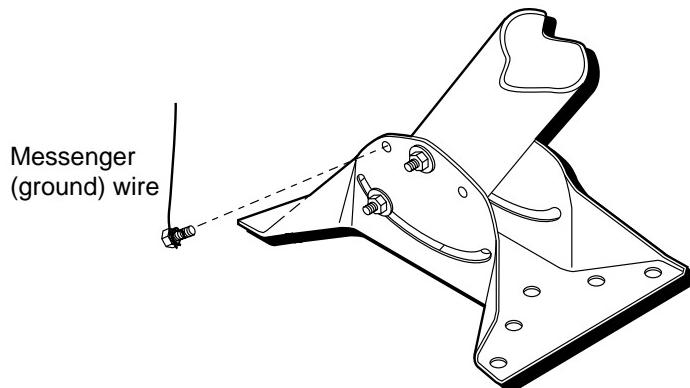


#8 x 1" Phillips Head Screw
(LNB & Adapter Mounting)



#8 Insert Nut
(LNB & Adapter Mounting)

- Locate the grounding hardware (one #10 hex washer head screw), and insert the bolt as shown below and attach the messenger (ground) wire to the foot of the mast (you may want to trim the extra messenger wire before attaching). You will connect the other end of that wire to the grounding block at the building entry point.



Grounding Hardware



#10 Hex Washer Head Screw
(Ground Screw)

- Steps 7:** Attach the messenger (ground) wires to the mast foot with the nut and bolt.

- Repeat steps 3-8 for Satellite B (119° satellite).

Note

When using a pole mount, you need to attach the grounding wire to the metal pole using a 1 1/2" grounding clamp.

A Few Words About Grounding the DIRECTV PLUS™ System

Grounding the satellite system to the central building ground helps protect it and other components from lightning damage. Dish installation should comply with local codes and the National Electrical Code (NEC). Grounding the satellite system is something you can probably do yourself. But if you're not sure, you should contact a qualified electrician.

Acceptable central building ground points

- Grounded interior metal cold water pipe within five feet of the point where it enters the building.
- Grounded metallic service raceway.
- Grounded electrical service equipment enclosure.
- Eight-foot grounding rod driven into the ground (only if bonded to the central building ground by #6 or heavier bonding wire).
- Other acceptable grounding electrodes that comply with sections 250 and 810 of the National Electrical Code (NEC).

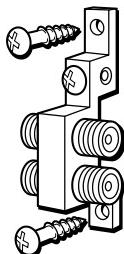
IMPORTANT

The United States National Electrical Code specifies that coaxial cable that is exposed to lightning shall be connected to the grounding system of the building as close to the point of cable entry as possible.

Final Installation

Routing and Grounding the Cables

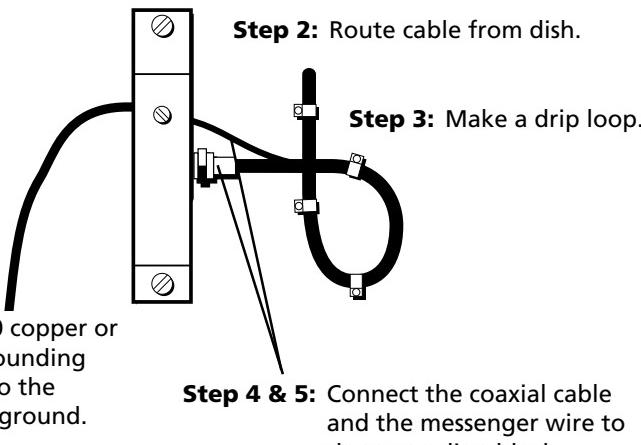
1. Attach the grounding block(s) to the side of your house close to the point you have chosen as the coaxial cable entry point. You may have to use anchors, togglers, or wood screws depending on the surface on which you are mounting the grounding block.



Step 1: Attach the grounding block(s) to side of your house at your designated entry point.

2. Route the coaxial cable and messenger (ground) wire from the bottom of the mast to the grounding block.
3. Make a 3"- 5" drip loop using cable clips at the grounding block as shown. This will prevent water from running into the connection at the grounding block.
4. Place some silicone grease on the connector and connect the coaxial cable to the grounding block.
5. Secure the messenger (ground) wire to the grounding block.
6. Locate the central building ground (see the list of acceptable central building grounds on the preceding page).
7. Locate the grounding wire (#10 copper or #8 aluminum) that will extend from the grounding block to the central building ground. Attach the grounding wire to the grounding block by placing it through the wire hole in the grounding block and tightening the screw.
8. Route the grounding wire from the grounding block to the central building ground, and connect to the central building ground.
9. Repeat grounding steps for Satellite B.

Steps 7 & 8: Connect the #10 copper or #8 aluminum grounding wire and route to the central building ground.



CAUTION

It is extremely important to ground the dish AND the coaxial cables to a single point in the central building ground. A nearby lightning strike can easily damage an ungrounded dish, the receiver and your TV. Connecting both ground wires to the same point in the central building ground meets code requirements and provides the best protection for your equipment.

Cable Routing Tips

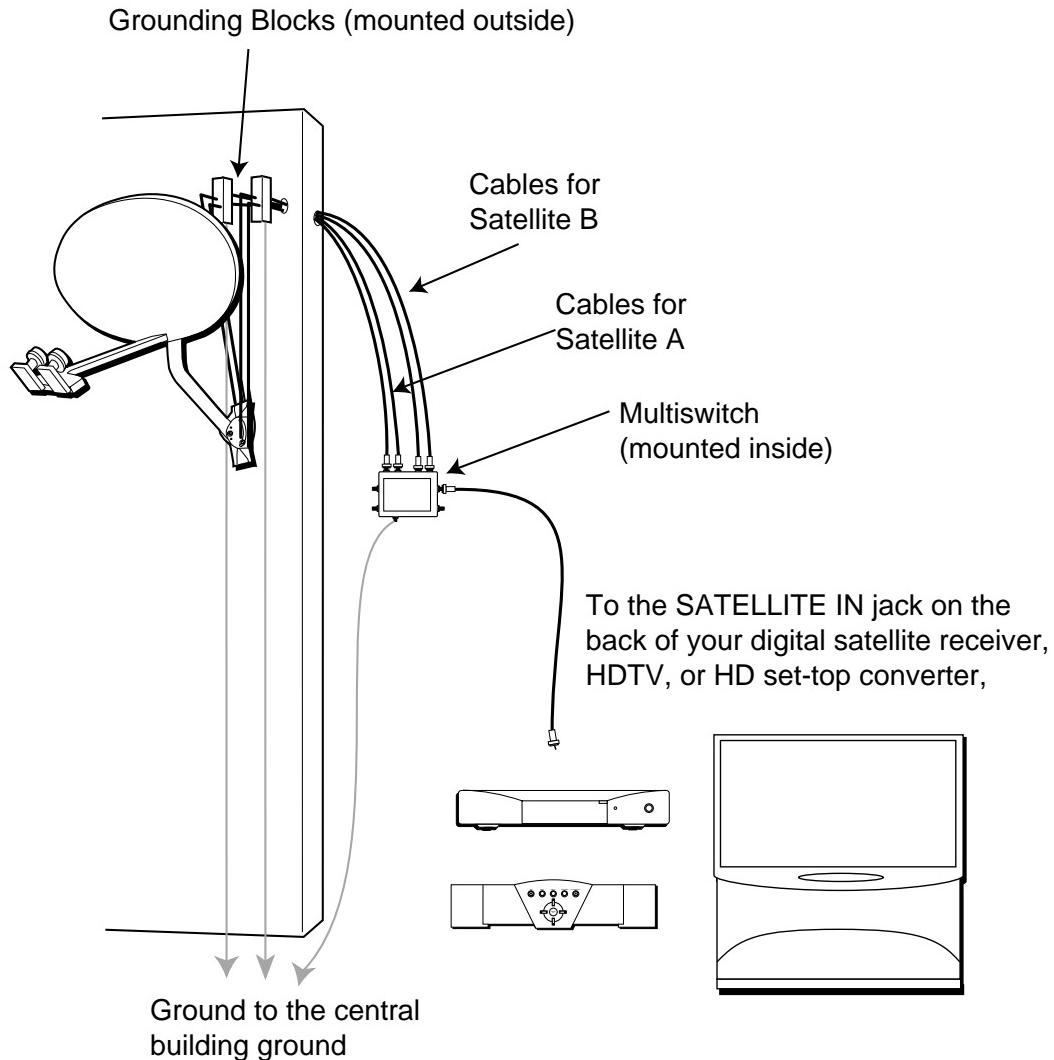
- If you are routing the grounding wire along the ground, make sure the wire is buried deep enough so that it will not be damaged or uncovered.
- If you are routing the wire or cable above the ground, use cable clips to secure the two to a wall or surface.
- Make sure you route the grounding wire in an area where people or animals are not likely to come in contact with the cable.

Running Cable Into the House

Cable Entry Overview

CAUTION

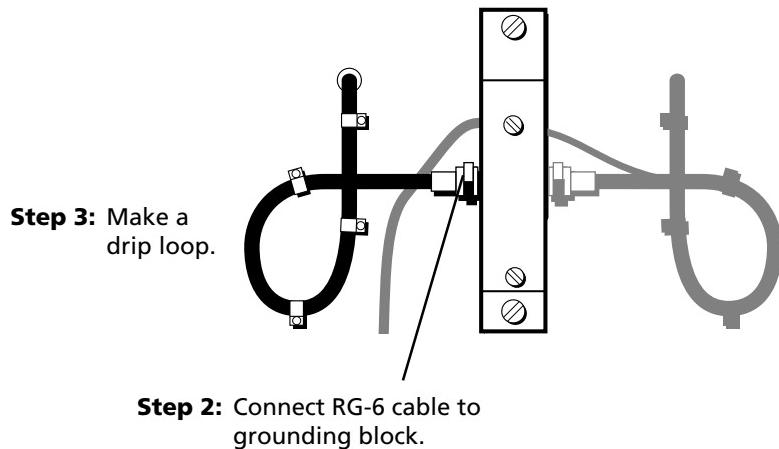
Before drilling, make sure there are no wires or pipes behind the wall in the area of the hole.



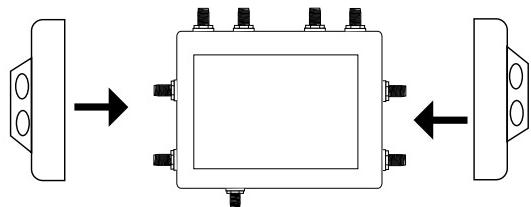
Final Installation

Step-by-Step Instructions for Routing the Cables

1. Drill a hole in the location you want the coaxial cable to enter.
2. Place some silicone grease on the connector and connect the RG-6 coaxial cable that will extend from the grounding block to the receiver.
3. Make a 3" - 5" drip loop using cable clips at the grounding block.



4. If you have not already mounted the multiswitch inside your house, use the mounting brackets and hardware to mount the multiswitch.
 - a. Slide the mounting brackets on to the multiswitch.
 - b. Use the M6 hex head self tapping screws to mount the multiswitch.



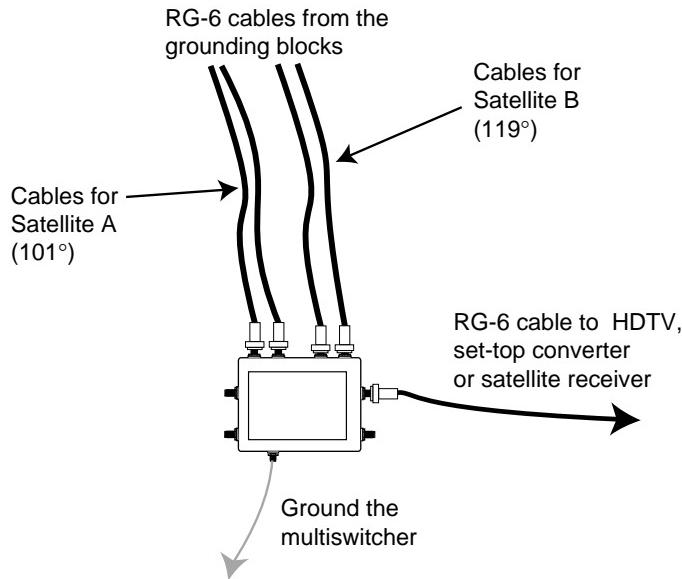
Multiswitch Mounting Hardware



M6 Hex Head Self Tapping Screw
(Multi-Switch Mounting)

5. Route the coaxial cable through your house to appropriate connectors on the Multiswitch (Satellite A or B).
6. Once you have routed all four cables to the correct inputs on the multiswitch, you need to route one cable from the multiswitch to the back of the digital satellite receiver, HDTV, or HD set-top converter. You can use any of the four outputs on the multiswitch.

7. Be sure to ground the multiswitch.
8. Use a silicone sealant to seal all outside connections and the hole you drilled for the coaxial cable to enter your house.



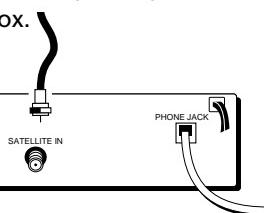
Making the Final Connections

1. Connect the RG-6 coaxial cable to the IN jack for satellite cable at the back of the digital satellite receiver, HDTV, or HD set-top converter as shown. DO NOT connect the coaxial cable to the IN FROM ANTENNA jack!
2. Take a phone off the hook to prevent electric shock from incoming calls.
3. Connect a phone cord from the back of the digital satellite receiver, HDTV, or HD set-top converter to a phone jack.

About the Phone Connection

The satellite receiver calls a telephone number once a month or so to update your Access Card. It is also used to order Pay-Per-View (PPV) events. These calls only take a few seconds.

Step 1: Connect the RG-6 cable to the IN jack for satellite reception on the back of the digital satellite receiver, HDTV, or HD set-top converter box.



Step 2 & 3: Take the phone off the hook before you connect a phone cord from an outlet to the back of the digital satellite receiver, HDTV, or HD set-top converter.

Acquiring and Fine Tuning the Signal

Now that you have installed the DIRECTV PLUS™ satellite antenna and routed all of the cable, it's time to acquire and fine tune the signal. Before you begin, you may want to go outside and double-check the azimuth, elevation, and tilt settings on the dish to make sure they correspond to the on-screen coordinates given.

- Make sure that the elevation indicator is aligned with the edge of metal, not the washer or the bolt.
- Make sure the antenna's mast clamp is "tilted" to the degree markers indicated.
- Use a compass to verify that the azimuth setting on the dish is correct.

When you are confident that the settings are correct, bring up the "Dish Pointing" menu again and use the on-screen signal meter to see if you are getting a signal. However, once you have acquired a signal, you must fine tune it to insure you have the strongest settings possible.

Refer to your digital satellite receiver, HDTV, or HD set-top converter manual for on-screen menu information.

If you are not receiving a signal, you need to incrementally adjust the azimuth setting on the dish. After you receive a signal, you will want to continue to adjust your settings to get the best possible signal.

Step-By-Step Instruction for Acquiring and Fine Tuning the Signal

1. Read the instruction manual that came with your digital satellite receiver, HDTV, or HD set-top converter to determine how to access the on-screen signal meter.

The signal meter shows you when you have locked onto a satellite's broadcast signal, and gives you the signal strength. It is easiest to use the signal meter with the help of another person to relay signal strength values to you, or by moving the TV displaying the signal meter so that is easily viewed at the point of installation.

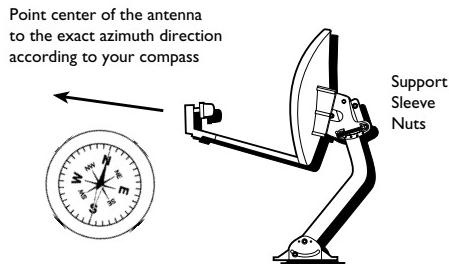
2. Make sure that you select the correct type of dish (round or oval). The signal meter will give you the pointing coordinates for your antenna, and values will depend on the type of antenna you have selected. Failure to select the correct dish will result in wrong pointing angles as well the inability to receive certain programming.
3. Access the signal meter. Set signal meter to the 101° satellite (this might also be represented on-screen as "Satellite 1" or "Satellite A"). At this point you will probably not have a signal.

Maximum Signal Strength

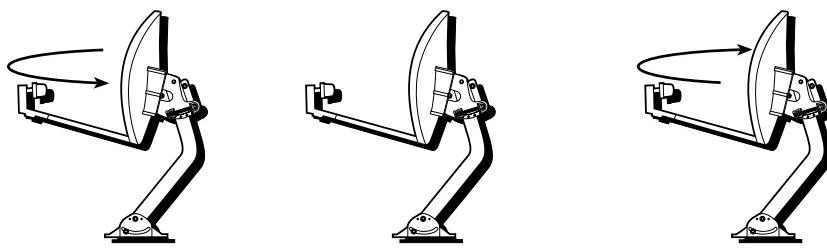
While the maximum signal meter value is 100, the signal strength you achieve will most probably be less. Although there is no difference in picture quality between signal strengths of 60 and 85 percent, the higher the signal, the less likely you are to experience signal outages during adverse weather.

Tip

You can adjust your TV's volume to hear the signal meter from the dish location, or you may want a friend to watch the signal meter and relay the strength reading to you.



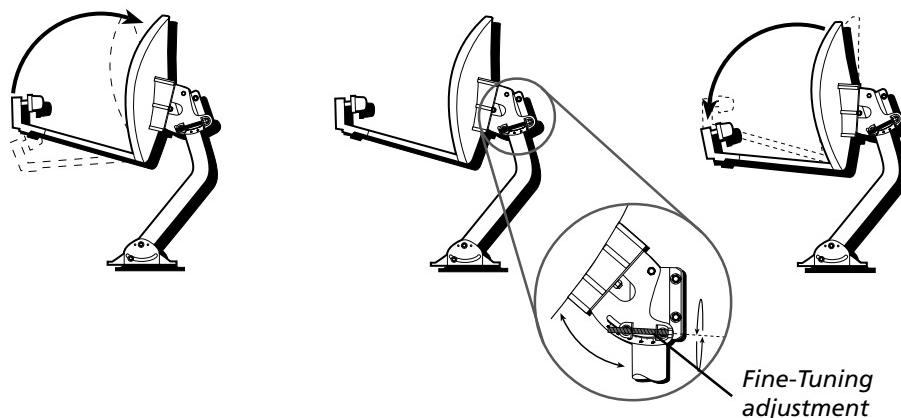
- Using a compass, point the antenna east (left) of the azimuth value for your location.
- Sweep the antenna towards west (right) and through the azimuth point by moving the dish in approximately 3 degree increments and pausing to wait for an updated value from signal meter. **If the signal is found and signal meter is locked, go to step 4.**



Tip

To make sure you have the strongest possible signal(s), move the dish until you get a continuous tone, then continue moving until the single tone stops. Go back to the strong setting, then repeat the process in the opposite direction. Do this until you know where the strongest setting is.

- If after sweeping the antenna completely to the west, the satellite signal is not found, adjust the elevation +2 degrees and sweep the azimuth again.
- If the signal is still not found, adjust the elevation -2 degrees from the original value (-4 degrees from current setting) and sweep the azimuth again.



- If the signal is still not found, check to make sure the cables are connected correctly. Also verify the Azimuth, Elevation and Tilt angles for your location and the plumbness of the mast using a bubble level.

Final Installation

4. With signal meter locked and displaying a value greater than 0, adjust the azimuth until the signal meter value is maximized. Then further maximize the signal meter value by finely adjusting the elevation angle. Make a note of the elevation and the azimuth angles where signal meter was the highest. The elevation angle can be read from the scale, the azimuth angle can be noted by marking the mast and antenna bracket using a pencil, crayon, soap, etc.
5. Switch signal meter to satellite 119° (this might also be represented on-screen as “Satellite 2” or “Satellite B”). If the antenna, mast and multiswitch have been installed properly, signal meter should be locked. For many parts of the US, the optimum Azimuth and Elevation settings for both satellites will be almost the same. However, for some parts of the country in the Northeast and Southwest, there might be slightly larger differences in the optimum settings between the satellites. If no signal is available, check the connections to the multiswitch.
6. Once again, sweep the azimuth until the signal meter value for satellite 119° is maximized, then adjust the elevation to peak the reception for satellite 119°. Make a note of the elevation and azimuth angles.
7. Switch signal meter to satellite 101° to make sure that signal meter is locked for both satellites.
8. For installations where there is a difference in settings, adjust the Azimuth and Elevation settings halfway between the optimum points that were noted for each satellite. This will ensure the best performance in adverse weather conditions. After adjusting antenna, make sure that signal meter is still locked for both satellites.
10. Carefully tighten all of the bolts, trying not to move the antenna on the mast while you do so. When done tightening the bolts, make sure that signal meter is still locked for all satellites.
 - If the antenna moves or the signal meter values change significantly lower while tightening the bolts, slightly loosen the elevation bolts (so they are still somewhat snug), and adjust to maximize signal strength; then carefully tighten them again.

Reference

Chapter Overview:

- Troubleshooting
- Toll-Free Telephone Product Help
- Limited Warranty
- Index



Troubleshooting

Can't Pick Up the Satellite Signal

Most problems with signal acquisition can be traced to one of these points: **improper cabling and connections** or **inaccurate positioning and pointing of the DIRECTV PLUS™ dish**.

Cabling and Connections Problems

1. Make sure you're using the proper type of RG-6 coaxial cable to connect the LNB to the grounding block and the grounding block to the satellite receiver. Standard Cable TV coaxial cables (RG-59) will **NOT** pass the satellite signals properly. **Important:** Do NOT connect the RG-6 cable from the dish or grounding block to any existing TV cable in your house. Do not use conventional TV splitters. They will not pass the satellite signals.
2. Make sure the Access Card is fully inserted into the Access Card slot.
3. Check all cable connections to make sure they are securely fastened to the proper connectors, from the TV, to the satellite receiver, all the way out to the dish LNB. Make sure the coaxial cable connector center conductor is not bent or broken.
4. Make sure the cable from the dish to the receiver is connected to the SATELLITE IN jack on the back of the receiver (**NOT** the ANTENNA IN jack).

DIRECTV PLUS™ Dish Positioning and Pointing Problems

1. Verify that you are using the correct azimuth and elevation for your city by using the dish pointing menu.
2. Make sure the DIRECTV PLUS™ dish is physically set to the correct coordinates given on the dish pointing menu.
 - Make sure the DIRECTV PLUS™ dish mast is plumb and level.
 - Make sure the elevation indicator (edge of metal, NOT the washer or the bolt) is aligned to the correct elevation and that the polarization is set correctly.
3. Use a compass to verify that the center of the antenna is pointed toward the correct azimuth reading (number) as indicated by the dish pointing menu. Nearby metal objects may cause a compass to give an inaccurate reading.
4. Make sure there are no obstructions (trees, buildings, windows, your body or hands, etc.) that might be blocking the satellite signal.
5. Slowly rotate the DIRECTV PLUS™ dish left or right (one tick mark at a time) pausing at each for 3-5 seconds until the on-screen signal meter produces one continuous tone.
6. If you can't acquire a signal by rotating the DIRECTV PLUS™ dish left and right, readjust the elevation of the dish.
 - Return the center of the antenna to the original azimuth (left-to-right compass direction).
 - Loosen the elevation nuts on the LNB support arm and position the DIRECTV PLUS™ dish upward or downward (one tick mark at a time). When finished, retighten the nut.

Temporary Satellite Signal Loss

If you lose the satellite signal temporarily, the problem can usually be traced to one of these points:

1. **Rain Fade.** Rain fade is a normal, temporary loss of a satellite signal due to the inability of the satellite signal to penetrate unusually heavy, rain-filled clouds, rainfall, or snowfall. Rain fade tends to be brief, lasting only as long as the heavy cloud condition persists.

To minimize rain fade effects, maximize your signal strength. Then, when rain fade occurs, you have the best chances of having a signal that is still strong enough to view.

Make sure the DIRECTV PLUS™ dish is mounted securely. The strong winds that often accompany heavy rainstorms can move the dish out of position if it is not mounted securely.

Also, heavy/wet snow and ice buildup on the DIRECTV PLUS™ dish can block the satellite signal until the buildup is removed.

2. **Overheated Components.** The satellite receiver must receive adequate ventilation to work safely and properly. If the receiver overheats, the satellite signal may deteriorate until adequate ventilation is restored. Do not stack VCRs or other components on top of the satellite receiver.

You hear a dialing sound while talking on the phone (If the Satellite Receiver is Connected to a Phone Line)

Your satellite receiver may be attempting to call the billing center. Under normal conditions, the receiver hangs up any time it detects what it interprets as a voice on the line. After four unsuccessful attempts to get a dial tone, the receiver is designed to call out regardless of the status of the line. If you're using the phone when the receiver calls out, you'll hear a dialing sound. Don't worry: your phone connection will not be broken.

DIRECTV PLUS™ Dish Pointing Steps

Step 1: Are you receiving a signal?

- If yes, go to Step 4.
- If no, proceed to Step 2.

Step 2: Adjust the azimuth right or left. Are you now receiving a signal?

- If yes, go to Step 4.
- If no, proceed to Step 3.

Step 3: Adjust the elevation up or down 1 degree. Are you now receiving a signal?

- If yes, proceed to Step 4.
- If no, return to Step 1.

Step 4: Carefully adjust the azimuth (left or right) and the elevation (up or down) until the peak signal is achieved. When finished, tighten the azimuth and elevation bolts.

Toll-Free Telephone Product Help

You can reach Thomson Consumer Electronics at the following number:
1-800-679-4776 (Toll free inside U.S.A.)

Thomson provides a toll-free telephone number to help you with any problems you may encounter with your DIRECTV PLUS™ system, as many problems can be diagnosed over the phone. If necessary, a replacement unit can be shipped to you. **Please have your DIRECTV PLUS™ system model/serial number and date of purchase ready when you call.** If your unit is out of warranty, we will quote the cost of an exchange unit to you.

Returning Equipment to Thomson for Repair or Exchange

If we are unable to resolve your problem over the phone we will gladly service your unit or exchange it for a new or refurbished unit. Refer to the limited warranty included in the booklet to learn about your specific rights and responsibilities. *Always consult Thomson and get a Return Authorization number before returning anything.* Obtain a Return Authorization (RA) number from the telephone representative before returning your equipment to avoid delays, accounting errors, or even loss of your unit.

Important Information to Customers Who Ship Defective Equipment to Thomson Consumer Electronics

The Thomson representative who authorizes the return of your equipment will give you an RA number over the phone. The representative will also provide you with instructions on where and how to return your unit. Write the number in large, clear characters on the outside of the box. *To avoid confusion and misunderstandings, shipments without an RA number clearly visible on the outside of the box will be returned to you at your expense.*

Include a brief note describing the problem and any conversations you have had with Thomson personnel about the problem. Include your name, address and model/serial number of your unit. These numbers are located on the back of your receiver. If your DIRECTV PLUS™ system is within the warranty period, please provide a copy of the bill of sale to verify purchase date. Use the original box and packing material to protect the equipment from damage in shipment. **For your protection, insure all shipments for full replacement value and use a reliable shipper.** Thomson assumes no responsibility for warranty shipments from the customer to the factory if not shipped in the manner prescribed by Thomson.

Limited Warranty

What does your warranty cover?

- Any defect in material or workmanship.

For how long after your purchase?

- One year.
- The warranty period for rental units begins with the first rental.

What will we do?

- Exchange the defective portion of your antenna with a new, or at our option, a refurbished unit.

How do you make a warranty claim?

- Return the unit at your expense to the dealer from whom it was purchased together with proof of purchase for a replacement unit.

How do you make a warranty claim without involving the dealer?

- Properly pack your antenna including all items which were originally packed with the product. We recommend using the original carton and packing materials.
- Include in the package a copy of the sales receipt or other evidence of date of original purchase or exchange. If the unit was a gift, provide a statement specifying the date received. Also print your name and address and a description of the defect.
- Ship the unit standard UPS or equivalent to:

**Thomson Consumer Electronics, Inc.
Product Exchange Center
11721 B Alameda Avenue
Socorro, Texas 79927**

- A new or refurbished unit will be shipped to you prepaid freight.

What does your warranty not cover?

- Customer instruction. Your Owner's Manual provides information regarding operating instructions and user controls. For additional information, ask your dealer.
- Installation and set-up service adjustments.
- Damage from misuse or neglect.
- Acts of God, such as but not limited to lightning damage.
- Product which has been modified or incorporated into other products.
- Product purchased or serviced outside the continental U.S.

How does state law relate to this warranty?

- This warranty give you specific legal rights, and you may also have other rights which vary from state to state.

If you purchased your product outside the continental United States?

- The warranty does not apply. See your dealer for warranty information.

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If your satellite system needs service, please contact your dealer or the nearest Servicenter from the yellow pages. Please do not send any products to the Indianapolis address listed in this manual or on the carton. This will only add delays in service for your product.

THOMSON CONSUMER ELECTRONICS

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